

**WHAT IS CLAIMED IS:**

- 1) An improved blending tool for rotation upon a blending machine shaft, such tool comprising:
  - (a) a shank having a long axis, at least one end, and an end region proximate to the end; and
  - (b) a riser member fixedly mounted during rotation at the end region of the shank, said riser member having an outside surface with a forward region, wherein the forward region is angled outward from the long axis of the shank at an angle between 10 and 16 degrees.
- 2) The improved tool of **Claim 1**, wherein the angle to the long axis of the shank is between 14 and 15.5 degrees.
- 3) The improved tool of **Claim 1**, wherein the entire outside surface of the riser member is angled outward from the long axis of the shank at an angle between 10 and 16 degrees.
- 4) The improved tool of **Claim 1**, wherein the riser member has a generally planar shape.
- 5) The improved blending tool of **Claim 1**, wherein the shank has a diagonal dimension and the riser member has a height dimension and wherein the ratio of the height dimension to the diagonal dimension is greater than 0.20.

6) The improved blending tool of **Claim 1**, wherein the shank has a diagonal dimension and the riser member has a height dimension and wherein the ratio of the height dimension to the diagonal dimension is greater than 0.25.

7) The improved blending tool of **Claim 1**, wherein the shank has a diagonal dimension and the riser member has a height dimension and wherein the ratio of the height dimension to the diagonal dimension is greater than 0.27.

8) The improved blending tool of **Claim 1**, wherein:

(a) the blending machine shaft has an axis of rotation and imparts a direction of rotation to the improved blending tool;

(b) a direction exists that is orthogonal to the long axis of the shank and to the rotation axis of the shaft; and

(c) the blending tool further comprises at least one blade extending outward from the shank wherein at least a portion of said blade is swept backward from the orthogonal direction away from the direction of rotation.

9) The improved blending tool of **Claim 8**, wherein the outwardly extending blade is fixedly mounted to the shank such that the shank is the bottom-most tool element mounted on the blending machine shaft.

10) The improved blending tool of **Claim 8**, further comprising a plurality of outwardly extending blades.

11) The improved blending tool of **Claim 1**, wherein each riser member has at least one through hole flow port.

- 12) The improved blending tool of **Claim 11**, wherein:
  - (a) each riser member has a leading and a trailing edge; and
  - (b) at least one flow port is located closer to the trailing edge than to the leading edge.
- 13) The improved blending tool of **Claim 1**, wherein:
  - (a) the improved blending tool is mounted inside a blending vessel having a wall;
  - (b) the riser member has a leading edge; and
  - (c) the leading edge of the riser member is less than 6 millimeters from the wall of the blending vessel.
- 14) An improved blending tool for rotation upon a blending machine shaft, such tool comprising:
  - (a) a shank having a diagonal dimension, at least one end, and an end region proximate to the end; and
  - (b) a riser member fixedly mounted during rotation at the end region of the shank, said riser member having a height dimension wherein the ratio of the height dimension to the diagonal dimension of the shank is greater than 0.20.
- 15) The improved blending tool of **Claim 14**, wherein the ratio of the height dimension to the diagonal dimension is greater than 0.25.
- 16) The improved blending tool of **Claim 14**, wherein the ratio of the height dimension to the diagonal dimension is greater than 0.27.

- 17) The improved blending tool of **Claim 14**, wherein:
- (a) the improved blending tool is mounted inside a blending vessel having a wall;
  - (b) the riser member has a leading edge; and
  - (c) at least a portion of the leading edge is positioned within millimeters from the wall of the blending vessel.
- 18) A blending machine, comprising:
- (a) a vessel for holding a media to be blended;
  - (b) a blending tool mounted inside the vessel, said blending tool comprising both (i) a shank having a long axis, at least one end, and an end region proximate to the end and (ii) a riser member fixedly mounted during rotation at the end region of the shank, said riser member having an outside surface with a forward region, wherein the forward region is angled outward from the long axis at an angle between 10 and 16 degrees; and
  - (c) a rotatable drive shaft, connected to the blending tool inside of the vessel, for transmitting rotational motion to the blending tool.
- 19) The blending machine of **Claim 18**, wherein the angle to the long axis of the shank is between 14 and 15.5 degrees.
- 20) The blending machine of **Claim 18**, wherein entire outside surface of the riser member is angled outward from the long axis of the shank at an angle between 10 and 16 degrees.
- 21) The blending machine of **Claim 18**, wherein the riser member has a generally planar shape.

22) The blending machine of **Claim 18**, wherein the shank of the tool has a diagonal dimension and the riser member of the tool has a height dimension and wherein the ratio of the height dimension to the diagonal dimension is greater than 0.20.

23) The blending machine of **Claim 18**, wherein:

(a) the blending machine shaft has an axis of rotation and imparts a direction of rotation to the improved blending tool;

(b) a direction exists that is orthogonal to the long axis of the shank and to the rotation axis of the shaft; and

(c) the blending tool further comprises at least one blade extending outward from the shank wherein at least a portion of said blade is swept backward from the orthogonal direction away from the direction of rotation.

24) The blending machine of **Claim 23**, further comprising a plurality of outwardly extending blades.

25) The blending machine of **Claim 23**, wherein the outwardly extending blade is fixedly mounted to the shank such that the shank is the bottom-most tool element mounted on the blending machine shaft.

26) The blending machine of **Claim 18**, wherein each riser member has at least one through hole flow port.

27) The blending machine of **Claim 26**, wherein:

(a) each riser member has a leading and a trailing edge; and

(b) at least one flow port is located closer to the trailing edge than to the leading edge.

28) The blending machine of **Claim 18**, wherein:

- (a) the vessel has a wall;
- (b) the riser member has a leading edge; and
- (c) at least a portion of the leading edge is positioned within 6 millimeters of the wall.

29) A method of blending toners, comprising

- (a) adding toner particles comprising a mixture of toner resin and colorants to a blending machine;
- (b) adding surface additive particles to the mixture of toner particles;

and

- (d) blending the toner particles and surface additive particles in the blending machine using a rotating blending tool comprising a center shank having a long axis, at least one end, and an end region proximate to the end plus a riser member fixedly mounted during rotation at the end region of the shank, said riser member having an outside surface with a forward region, wherein the forward region is outwardly angled from the long axis of the shank at an angle between 10 and 16 degrees.

30) The method of **Claim 29**, wherein the step of blending further comprises rotating at least a portion of the riser member at a speed greater than 21 meters/second.

31) The method of **Claim 29**, wherein the step of blending further comprises rotating at least a portion of the riser member at a speed greater than 30 meters/second.